

REMARKS

Reconsideration and withdrawal of the objection and rejections set forth in the above-mentioned Official Action in view of the foregoing amendments and the following remarks are respectfully requested.

Claims 1-3, 5-11 and 13-27 remain pending in the application, with Claims 1, 7, 10, 17, 20, 23 and 27 being independent. Claims 1-3, 5-11 and 13-16 have been amended herein.

The drawings were objected to as allegedly not showing certain features recited in Claims 8, 18 and 21. In particular, the Office Action suggests that the drawings do not show the feature of the vector direction of an exerting force furthest from the vector direction of the exertion force at the time the conveyance roller is stopped, as is generally recited in those claims. It is respectfully submitted, however, that the noted features are, in fact, depicted in the drawings. For example, in Figure 4 the force vector Fv0 is the vector force when conveyance roller 108 is stopped. In Figure 4, the vector direction of an exerting force furthest from the exerting force exerted on the bearing when the conveyance roller is stopped can be Fv1. As to Claim 21, the noted feature is depicted in Figure 7 in conjunction with Figure 5. For example, the direction perpendicular to the line coupling the two contact portions can be represented by Fct and the combined vector direction can be represented by Ft, with the vector direction of the exertion force at the time the conveyance roller is stopped being represented by Fv0 (Figure 5). Explanations for the

foregoing are described in paragraphs [0038] and [0040] of the original specification. In view of the foregoing, reconsideration and withdrawal of the objection to the drawings are requested.

Claims 2, 6 and 14-16 were rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite. Without conceding the propriety of this rejection, Applicant has reworded the language questioned by the Examiner. Reconsideration and withdrawal of the § 112, second paragraph, rejection are also requested.

Claims 1, 2, 5, 6, 17-19 and 27 were rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 6,390,700 (Foster et al.). Claims 1, 2, 5-10 and 13-27 were rejected under 35 U.S.C. § 102(e) as being anticipated U.S. Patent No. 6,769,683 (Hiramatsu). Claims 3 and 6 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Foster et al. Claims 3, 6, 11, 15 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Hiramatsu. These rejections are respectfully traversed.

Foster et al. is directed to a bearing in an imaging apparatus including a first bearing surface 146 and a second bearing surface 152, each having an arcuate cross-section. The two bearing surfaces together form a concave shape for receiving cylindrical shaft surface 126A of feed roller shaft 124. The two bearing surfaces are symmetrical with respect to plane of symmetry 160, which may be arranged to be vertical. A direction perpendicular to a line coupling to contact portions of the bearing surfaces and shaft 124 could be on the plane of symmetry 160. However, Applicant submits that Foster et al. does

not describe the position or the direction in which back up rollers 132 contact and apply the pressing force to the feed rollers provided on the feed roller shaft 124. Therefore, the relation of a vector direction of forces exerted on the bearing when the conveyance roller is stopped and a direction perpendicular to a line coupling the two contact portions cannot be determined in Foster et al. Moreover, Applicant submits that the vector directions of forces exerted on the bearing change from when the roller is in the stopped state and when it starts rotating. Therefore, it is uncertain as to whether the direction perpendicular to the line coupling the two contact portions stays within this range of change. Therefore, even if there are similarities in the structure of the bearing in Foster et al. and that of the claimed invention, the overall claimed invention does not necessarily flow from Foster et al.

Accordingly, Foster et al. fails to disclose or suggest at least that the bearing (or chassis) supports the conveyance roller (or bearing) so as to locate a direction perpendicular to a line coupling the two contact portions within a range of vector directions of varying exertion forces exerted on the bearing when the conveyance roller is stopped and when the conveyance roller is rotating, as is recited in independent Claims 1, 7 and 10.

Foster et al. also does not disclose or suggest at least that a direction perpendicular to a line coupling two contact portions is located, in an arbitrary cross-section perpendicular to the axial direction of the conveyance roller, to correspond with the combined vector of an exerting force at a state of stopping and at an exerting force at a state of starting the conveyance roller, as is recited in independent Claim 27.

Furthermore, Foster et al. does not disclose or suggest at least that a direction perpendicular to a line coupling the two contact portions is located, in an arbitrary cross-section perpendicular to the axial direction of the conveyance roller (or bearing), within a range of vector directions of varying exertion forces exerted on the bearing when the conveyance roller is stopped and when the conveyance roller is rotating, as is recited in independent Claims 17, 20 and 23.

Thus, Foster et al. fails to disclose or suggest important features of the present invention recited in the independent claims.

The image recording apparatus of Hiramatsu includes a conveying roller 14 and a pinch roller 21. In Figure 3, conveying roller 14 is rotatably supported by a bearing 20, which supports roller shaft portion 14a. Shaft portion 14a is stabilized to be in tangential contact with two bearing arc portions 20a of bearing 20 at contact lines 20c. However, Applicant submits that Hiramatsu does not describe any change in direction of forces exerted on the bearing, nor is there any discussion of a direction perpendicular to a line coupling the two contact portions. Hiramatsu is also not believed to disclose or suggest the features recited in the independent claims noted above as being deficient in

Foster et al.

Thus, the independent claims are patentable over the citations of record. Reconsideration and withdrawal of the §§ 102 and 103 rejections are respectfully requested.

For the foregoing reasons, Applicant respectfully submits that the present invention is patentably defined by independent Claims 1, 7, 10, 17, 20, 23 and 27. Dependent Claims 2, 3, 5, 6, 8, 9, 11, 13-16, 18, 19, 21, 22 and 24-26 are also allowable, in their own right, for defining features of the present invention in addition to those recited in their respective independent claims. Individual consideration of the dependent claims is requested.

Applicant submits that the present application is in condition for allowance. Favorable reconsideration, withdrawal of the objection and rejections set forth in the above-noted Office Action, and an early Notice of Allowability are requested.

Applicant's undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 530-1010. All correspondence should continue to be directed to our below-listed address.

Respectfully submitted,



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